

REMARKS

This amendment after final is believed to put the application in condition for allowance. Early favorable action is solicited.

Applicant acknowledges with thanks the indication of allowability of dependent claim 20. Claim 20 has been rewritten in independent form.

Applicant also acknowledges the withdrawal of the 35 USC 112 rejection of sections 4-11 of the previous Office action, and notes that the present amendment to claim 87 overcomes the double patenting objection.

The claims as now pending are submitted to be in condition for allowance, but if not, by the present amendment are submitted to be in better form for appeal.

Applicant has revised claim 1 and rewritten claims 2 and 87 in independent form. These claims focus upon particularly important features of the invention. The other dependencies have been increased to take into account the increase in independent claims. Claim 9 has been cancelled. New dependent claim 90 limits the form of the printing of the claims on which it depends.

Applicant submits herewith a Supplemental Information Disclosure Statement to bring to the Examiner's attention a patent describing a light weight printed outer diaper covering that has recently come to its attention.

Applicant also submits, as Appendix A, two micro photographs of 66X magnification of the loop side (denoted "face side") and back side (denoted "binder side") of a nonwoven hook-engageable loop material bearing printing. As will be verified by a declaration of one of the inventors, being separately submitted, these photographs show an ultra thin nonwoven of the type employed in important embodiments of the invention. It has been printed on its loop side by dye sublimation. For purposes of showing the print on the nonwoven, the substrate to which the nonwoven is laminated has been omitted, so that the ultra thin loop material may be seen from back as well as front. The particular material shown was formed generally in accordance with the description of the specification, pages 15-18, employing staple, crimped polyester fibers of 6 denier, 3 inch length, which were first needled as a batt, and subsequently stretched and stabilized as described. The photographs shown were taken at a transition of black dye print to

red dye print resultant from dye sublimation printing on the loop side of the material. Such printing is generally described on page 8, line 2; page 27, line 21; and pages 31-33 of the specification.

The invention of revised claim 1, is a laminate comprised of a substrate and a layer of hook-engageable non woven material having a basis weight of less than about 4 ounces per square yard, the nonwoven being a stretched material, stabilized in its stretched condition in the manner that there are fibers or yarns of hook-engageable loop form on the surface from which hook-engageable fibers or yarns extend (the "second" surface of the claims), and a distribution of straightened fibers. A graphic design or image print lies at least partially upon the non-woven material, the printing residing on both the fibers or yarns of hook-engageable loop form and on the straightened fibers of the nonwoven.

For discussion in the specification, see e.g. page 3 lines 9-15 and Figure 3B and its related text, pages 15-18.

In Appendix A, with respect to claim 1, attention is drawn to the very flimsy or lacy nature of this hook-engageable loop fabric, reflective of its being of less than 4 ounce weight per square yard, with the fibers thick enough to serve as hook-engageable loops. The gray background which shows extensively in the photographs is an aluminum sheet on which the fabric resided during photography. On the "face" or loop side of the fabric of Appendix A, ("second surface" per claim 1) the protruding hook-engageable loops are seen, bearing the sublimation-printed dye. Some of the straightened fibers of the fiber mass, also bearing the printed dye, appear in the background. In the second photograph taken from the "binder" side ("first surface" according to claim 1), straightened fibers, as a result of the stretching of the claim, are more prominently seen, and also clearly bear the sublimation-printed dye. In the form of a laminate, especially with smooth paper (see claim 17), an inexpensive but fine-appearing dimensionally stable material is possible, capable of serving as decoration or as a visual display, the material also having the capability of being readily engaged by hook fasteners for the important advantages described in the specification.

None of the references of record, alone or in any proper combination, suggest the product of revised claim 1.

The arguments previously presented by Applicant are resubmitted, with the following addition.

In reference to Paragraph 12 of the present office action, we request that the Examiner review the arguments we have presented in the following light.

The Examiner has said "a patent is not required to disclose [sic] every feasible variation or obvious embodiment" . We submit this begs the question, for where has it been shown that the concept of the claims was "obvious"?

The point we have made is that, on one hand Nemec only concerns the old fashioned, heavy loop material, which applicant readily admits has been printed on for decades. When it comes to ultra-thin hook-engageable loop material, the examiner has offered absolutely no citation to prior art that shows that such material can be printed without impairing its hook engageability. On the other hand, applicant has pointed out very important facts about the two references that have been cited by the Examiner for the existence of ultra-thin hook-engageable material, namely, Lawless and Shepard et al. 1

Applicant, in the last response, presented to the examiner a careful review of each of those references and has irrefutably pointed out (1) that the inventors in each case were keenly aware, indeed, were apparently looking for the possibilities of decorative or visual effects and (2) they completely failed to suggest what is the most common and desirable way of achieving such effects, i.e. that of printing upon the material itself. From this, Applicant draws the strong logical inference that the ability to so print was not obvious to these experts. This, Applicant has submitted, is strong circumstantial evidence of the unobviousness of the ability to so print. We submit that the above quote from the Examiner's paragraph 12 is no rebuttal whatsoever to our point. We submit that if the Examiner has no better position to present, the Examiner has not made a case for non-obviousness, and the claim should be allowed.

To further buttress this position, under separate cover, Applicant Shepard explains in fact he did not realize that the material of the reference for which he was inventor was so printable at the time he made the earlier invention.

Furthermore, claim 1 as amended is specific as to the type of nonwoven, that it entails both loops and taut fibers. As Appendix A shows, the print resides on both the loops and the taut fibers to good effect. Nothing like that is shown or suggested in the references.

The examiner has made the point that somehow we did not address the full combination of the long string of references the Examiner originally cited. We will do so now, with respect to {claim 1, as amended: }

Of course it has been old to print on conventional loop materials using screen printing on the loop side of the materials, and the cited Nemec teaches no more than that. But, indeed, if one tried to use screen printing on the loop side of applicant's ultra-thin, low lying loop fabric, following Nemec's teaching, the viscous screen print material, of the consistency normally of chocolate pudding, when applied to the loop side, would paste down the low-lying loops and render the material useless as a hook-engageable material.

Shepard and Lawless teach ultra-thin nonwoven loop material, and Shepard is clear about the material having loops as well as taut fibers. But as has been mentioned, neither of these references teaches the concept of print directly on their materials. If we take Nemec's teaching, and try to print with screen printing ink on the loop side of the Shepard or Lawless materials, it is clear the hook engageable functionality of the material would be lost. The declaration being separately submitted by Shepard will verify this.

How are the other references of the string possibly relevant? They are not.

As pointed out in the last response, Lemelson is a hook material, not a loop material, and assuredly was not a loop material of weight less than 4 ounces per square yard, nor was Lemelson a laminate. Printing of lines on Lemelson's relatively heavy HOOK pile, has no suggestion of the discovered printability of ultra thin nonwoven hook-engageable LOOP materials, generally, and certainly not those comprised of taut fibers as well as loops, as required in claim 1. Lemelson does not make up for the lack of Nemec, Lawless or Shepard et al.

Powell teaches painting or silk screening on cloth. As previously explained, such heavy paint or screen print goo, as applied again by Powell on the LOOP side of the claimed ultra-thin nonwoven material would matt down the loop-defining low-lying fibers and render the material non-functional. Powell does not make up for the lack of Nemec, Lawless, Shepard et al, or Lemelson.

Bricker, to any extent relevant at all, only refers to conventional, heavy loop material, as explained in the prior response, and adds nothing whatsoever to the string of references.

Further, to reverse the order of the references in the rejection, and put Lawless first, for instance, does not make a different case. If we start out with Lawless as primary reference, there is nothing new here. Applicant readily admits that ultra-thin nonwoven hook-engageable materials, per se, were known, but Lawless fails to teach printability. Add Nemec to it and what have you got? You paint silk screen goo on Lawless and lose Lawless' hook engageability, the only functionality she was after. And so on. We think we have made the point sufficiently that we need not keep on showing the lack of fair teaching in these references.

We also point out that the newly cited reference US. 5, 458,590, Schleinz, et al, has to do with decorating the outside of a diaper that so far as can be seen has no suggestion of a fabric capable of hook engageability. The ability to print on something without hook engageability, where one does not have to be concerned about retaining the hook-ability character of the web, is submitted not to make the latter obvious, and the more so, when the web construction is so different, as here in claim 1, of stretched stabilized construction with taut fibers in the ground.

Coming now to claim 2, it is different from claim 1, in that is limited to a laminate with a "super ultra thin" nonwoven hook-engageable material, i.e. a material of weight less than about 2 ounces per square yard. It is not limited to the specific stretched and stabilized composition. It does require that the graphic design or image be imprinted on the hook-engageable loop side. Dependent claim 90, as dependent on claim 2, specifies, in particular that the print is of flexographic printing composition, a sublimable dye from dye sublimation, an electrostatic print deposit or an ink-jet print deposit. As anyone familiar with printing knows, inks and dyes are specifically formulated for the process by which they are applied, and the physical imprint is dependent on that composition.

We submit all of the arguments above are relevant for claim 2 but for the comment regarding the specific composition of the nonwoven. Further, we have shown that Nemec's or Powell's paint or pudding-like screen composition on the loop side of the fabric if tried, would result in failure with the super-ultra thin material, in that the loops would just be plastered down. Such an attempt, doomed to failure, we submit, would teach away!!

For reasons given, therefore, claim 2, and claims dependent thereon, including especially claim 90, are likewise submitted to be unobvious over the cited art. The burden of proof remains

on the Examiner, to show something other than inoperable references for evidencing obviousness.

Claim 87 is directed to a specific laminate, of smooth paper with the construction of original claims 1 and 4. The arguments previously made apply in the main, and are buttressed by the unique high qualities achieved by this simple but very inexpensive laminate, that has unique properties for visual displays. We note neither Shepard et al nor Lawless, who were chasing economy, foresaw this superior inexpensive combination, even though Lawless did have the possibility of film laminates in mind. The point is that paper is of course much less expensive than plastic film, on one hand, and indeed has superior properties to thin plastic films for many applications such as the unique displays presented in the present application. Smooth paper is inherently dimensionally stable, whereas nonwovens or plastic films are far less so. Because of the dimensional stability of the paper laminate, it can be manipulated as if it were paper, and thus applied to boards, or as box linings, used as pages in a scrap book, etc., with great ease, (see drawings in this application), not the case when dealing with a relatively limp nonwoven fabric or film laminate.

The arguments we brought out in the previous response, which please see, we submit, are validated by the comments here and support this claim, as do the foregoing comments regarding claims 1 and 2.

Of particular moment are the substantially varied area/density claims 6 and 7 and the highly advantageous dye limitation claims 11, 13, 14 and 88. Applicant has never heard of dye silkscreen ink. It is a pigment ink. Dye as used here is intended to refer to soluble material, i.e. classical dyes, as we submit it is clear from the specification. Dyes have been found to print well, see Appendix A, and preserve the hook-engageability of the loop material.

The remaining claims are all dependent and are submitted to be patentable, both for the reason of being dependent upon allowable claims, but also for respective reasons given in the prior response, which are hereby adopted.

While this response is submitted, by itself, to strongly demonstrate patentability of the claims, the Examiner's attention is also called to the supporting declaration being separately submitted.

Applicant : William H. Shepard et al.
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For the above reasons all claims are submitted to be allowable and early favorable action is solicited.

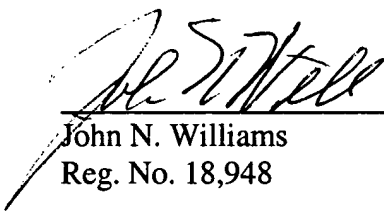
Attached is a marked-up version of the changes being made by the current amendment.

Applicant asks that all claims be allowed. Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date:

Aug 28, 2002



John N. Williams
Reg. No. 18,948

Fish & Richardson P.C.
225 Franklin Street
Boston, Massachusetts 02110-2804
Telephone: (617) 542-5070
Facsimile: (617) 542-8906

Version with markings to show changes made

In the claims:

Please cancel claim 9.

Please amend claim 1-4, 6, 7, 11, 13, 14-21, 87-89 as follows:

1. (Three times amended) A laminate comprising

a substrate having at least one broad surface, and

a layer of hook-engageable non-woven material having a basis weight of less than about 4 ounces per square yard and comprising a sheet-form web body having a first surface laminated to said at least one outer broad surface of the substrate and a second surface from which hook-engageable fibers or yarns extend, said hook-engageable material comprising stretched material, stabilized in its stretched condition, in the manner that there are fibers or yarns of hook-engageable loop form on said second surface and a distribution of straightened fibers; and

a graphic design or image printed at least partially upon the non-woven material, the print residing both on said fibers or yarns of loop form and on said straightened fibers.

2. (Amended) A laminate comprising

a substrate having at least one broad surface, and

a layer of [The laminate of claim 1 wherein said] hook-engageable material having [has] a basis weight of about 2 ounces or less per square yard and comprising a sheet-form web body having a first surface laminated to said at least one outer broad surface of the substrate and a second surface from which hook-engageable fibers or yarns extend; and

a graphic design or image printed at least partially upon the non-woven material, the graphic image or design comprising print applied to the side of said material from which hook-engageable fibers or yarns extend.

3. (Amended) The laminate of claim 1, 2 or 87 in which the hook-engageable material includes a binder resin anchoring the hook-engageable fibers or yarns and constituting between about 20% and 40% of the weight of the material.

4. (Twice amended) The laminate of claim [1] 2 or 87 wherein said hook-engageable material comprises a stretched material, stabilized in its stretched condition.

6. (Three times amended) The laminate of claim 1, 2 or 87 wherein the non-woven material has substantially varied areal density of fibers over its surface, the printed graphic design or image extending over areas of said substantially varied fiber density.

7. (Twice amended) The laminate of claim 6 wherein said non-woven material comprises areas with relatively high areal density of fibers interspersed with areas with relatively low areal density of fibers, the density of fibers in areas of highest areal density being greater by a factor of at least four from the density of fibers in areas of lowest areal density, the printed graphic design or image extending over areas of highest and lowest areal density of fibers.

11. (Three times amended) The laminate of claim 1, 2 or 87 wherein said graphic design or image comprises an image printed with dye on the second side of the non-woven material, from which the hook-engageable fibers or yarns extend, wherein [an] a design or image visible from the surface of the non-woven material is comprised of light reflected by printing on said second surface of the non-woven material and light reflected by printing on said hook-engageable fibers or yarns.

13. (Twice amended) The laminate of claim [9] 2 or 87 wherein said graphic design or image at least partially comprises dye printing residing on said hook-engageable fibers or yarns of the non-woven material.

14. (Twice amended) The laminate of claim [9] 2 or 87 wherein said graphic design or image at least partially comprises dye printing residing on the second surface of the web body from which the hook-engageable fibers or yarns extend.

15. (Twice amended) The laminate of claim [9] 1 or 87 wherein said graphic design or image at least partially comprises printing residing on said first surface of the web body, the non-woven material being at least partially transparent such that the design or image can be seen through the non-woven material.

16. (Twice amended) The laminate of claim [9] 1, 2 or 87 wherein said at least one outer broad surface of the substrate to which the non-woven material is laminated is continuous and said graphic design or image is at least partially printed on said outer broad surface of the substrate, the non-woven material being at least partially transparent so that the design or image can be seen through the non-woven material.

17. (Twice amended) The laminate of claim 1 or 2 in which said substrate comprises a smooth paper sheet.

18. (Twice amended) The laminate of claim 1 or 2 in which the substrate comprises at least a corrugated core.

19. (Twice amended) The laminate of claim 1 or 2 in which the substrate comprises a smooth paper sheet side of a corrugated paperboard.

20. (Twice amended) A laminate comprising
a substrate having at least one broad surface, and
a layer of hook-engageable non-woven material having a basis weight of less than
about 4 ounces per square yard and comprising a sheet-form web body having a first surface
laminated to said at least one outer broad surface of the substrate and a second surface from
which hook-engageable fibers or yarns extend, and
a graphic design or image printed at least partially upon the non-woven material,
[The laminate of claim 1 in which the] said substrate [comprises] comprising a corrugated core
laminated at its spaced apart flute regions directly to said hook-engageable material.

21. (Amended) The laminate of claim 1 or 2 wherein the substrate is selected from the group consisting of paper, wood, synthetic foam, chipboard, wallboard, metal, plastic, and cork.

87. (Amended) A laminate comprising
a substrate having at least one broad surface, and
a layer of hook-engageable non-woven material having a basis weight of less than
about 4 ounces per square yard and comprising a sheet-form web body having a first surface
laminated to said at least one outer broad surface of the substrate and a second surface from
which hook-engageable fibers or yarns extend, said hook-engageable material comprising
stretched material, stabilized in its stretched condition, and
a graphic design or image printed at least partially upon the non-woven material,
[The laminate of claim 1 in which] said substrate [comprises] comprising smooth paper.

88. (Amended) The laminate of claim 1, 2 or 87 in which the said image is formed of dye printed on said non-woven material.

89. (Amended) The laminate of claim [4] 1, 2 or 87 wherein the hook-engageable material comprises a non-woven material stretched substantially in two directions and stabilized in such stretched condition.



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